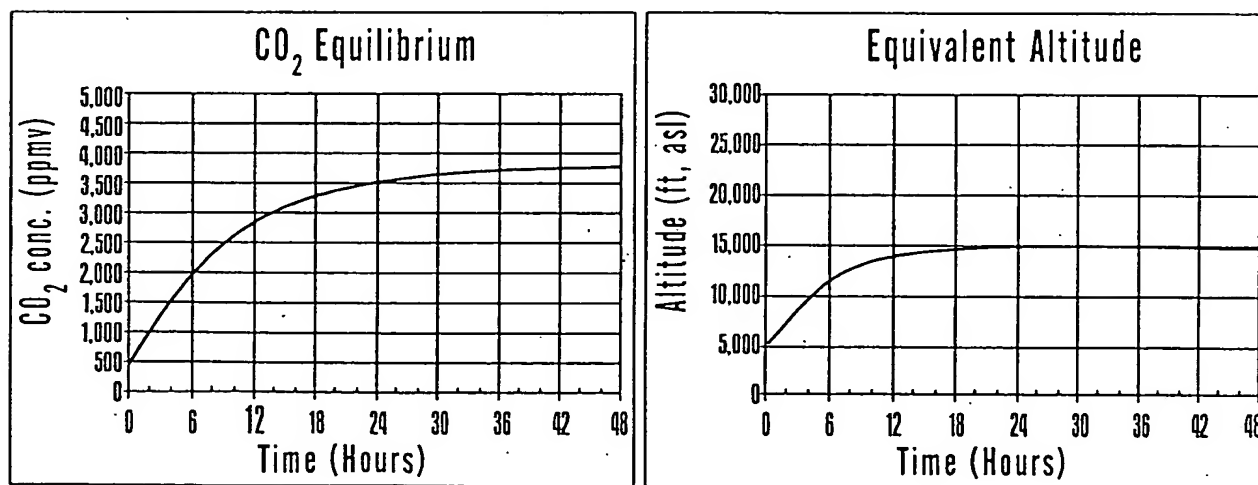




Room Size	
Length (ft)	10
Width (ft)	10
Height (ft)	10
Altitude of Site (ft asl)	5500
Number of People in Room	1
O ₂ Removal Rate (slpm)	5
Number of Systems	1
Per Person Heat Generation (w/m ²)	45
Initial O ₂ Content (%)	20.94
Outdoor CO ₂ Concentration (ppmv)	400
Initial Room CO ₂ Conc. (ppmv)	400
CO ₂ Scrubber Air Flow Rate (cfm)	0
CO ₂ Scrubber Efficiency (%)	80
Air Change Rate (ACH, hr ⁻¹)	0.1

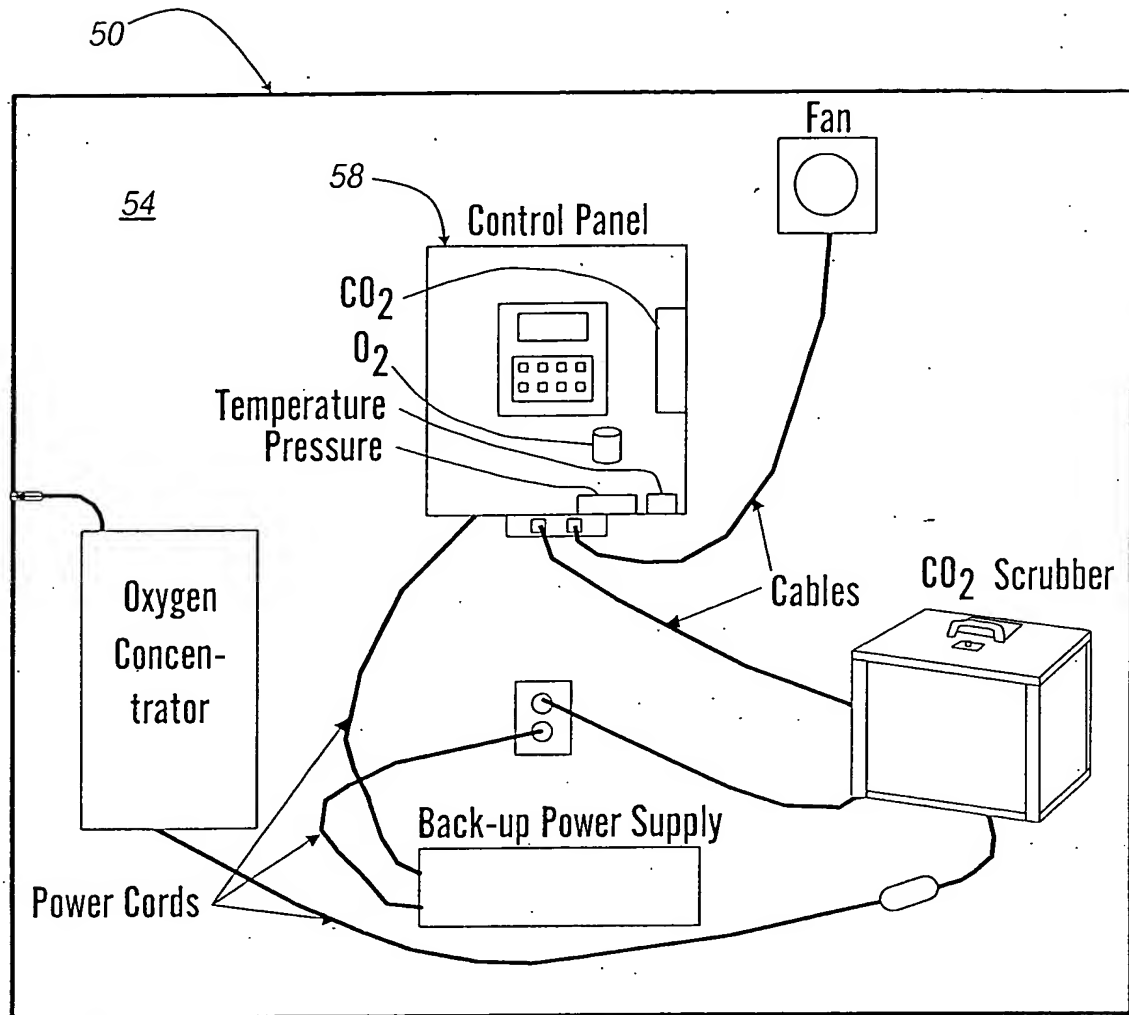
The Information Required for Initializing The Computer Model.

FIG. 1



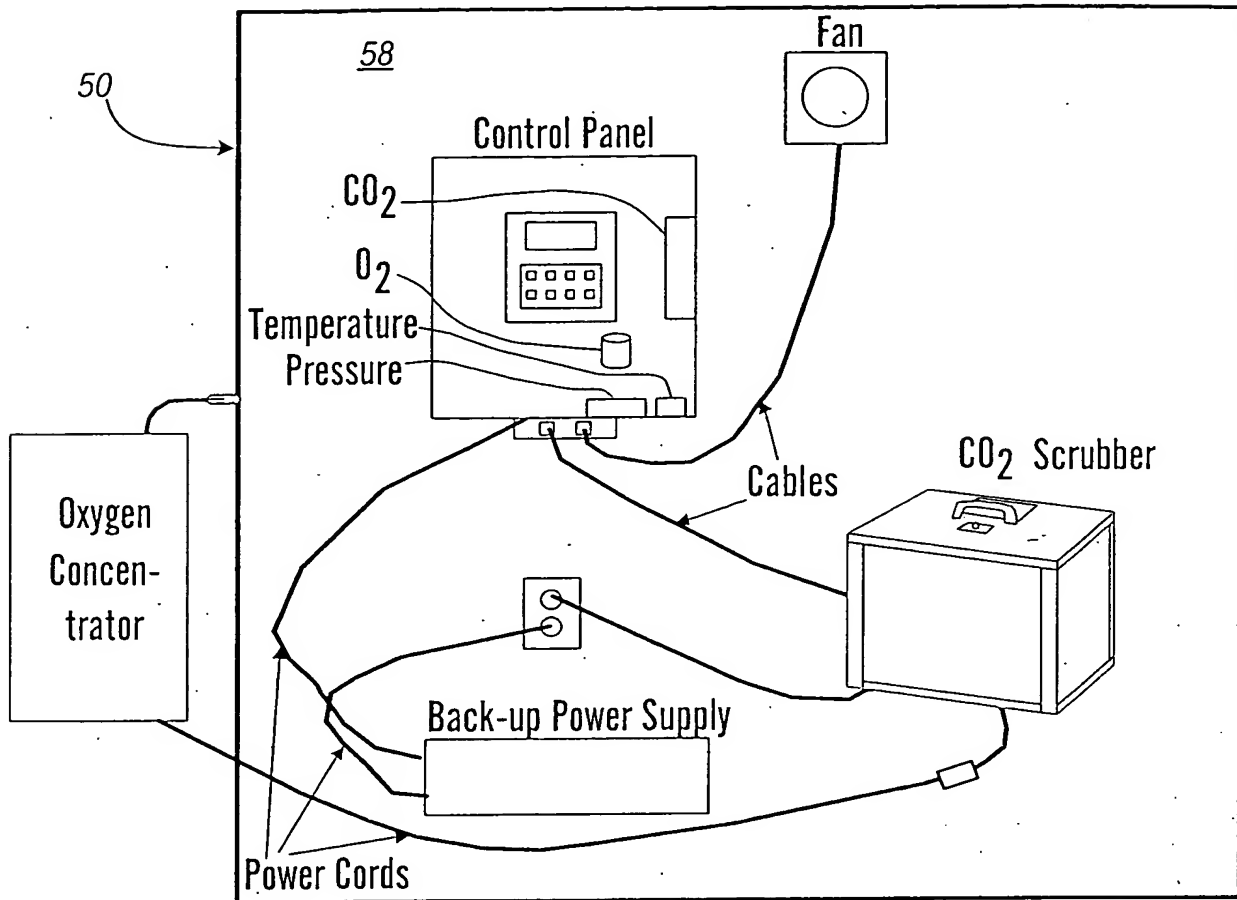
The Predicted CO₂ Concentration and Simulated Altitude Inside the Colorado Mountain Room as a Function of Time.

FIG. 3



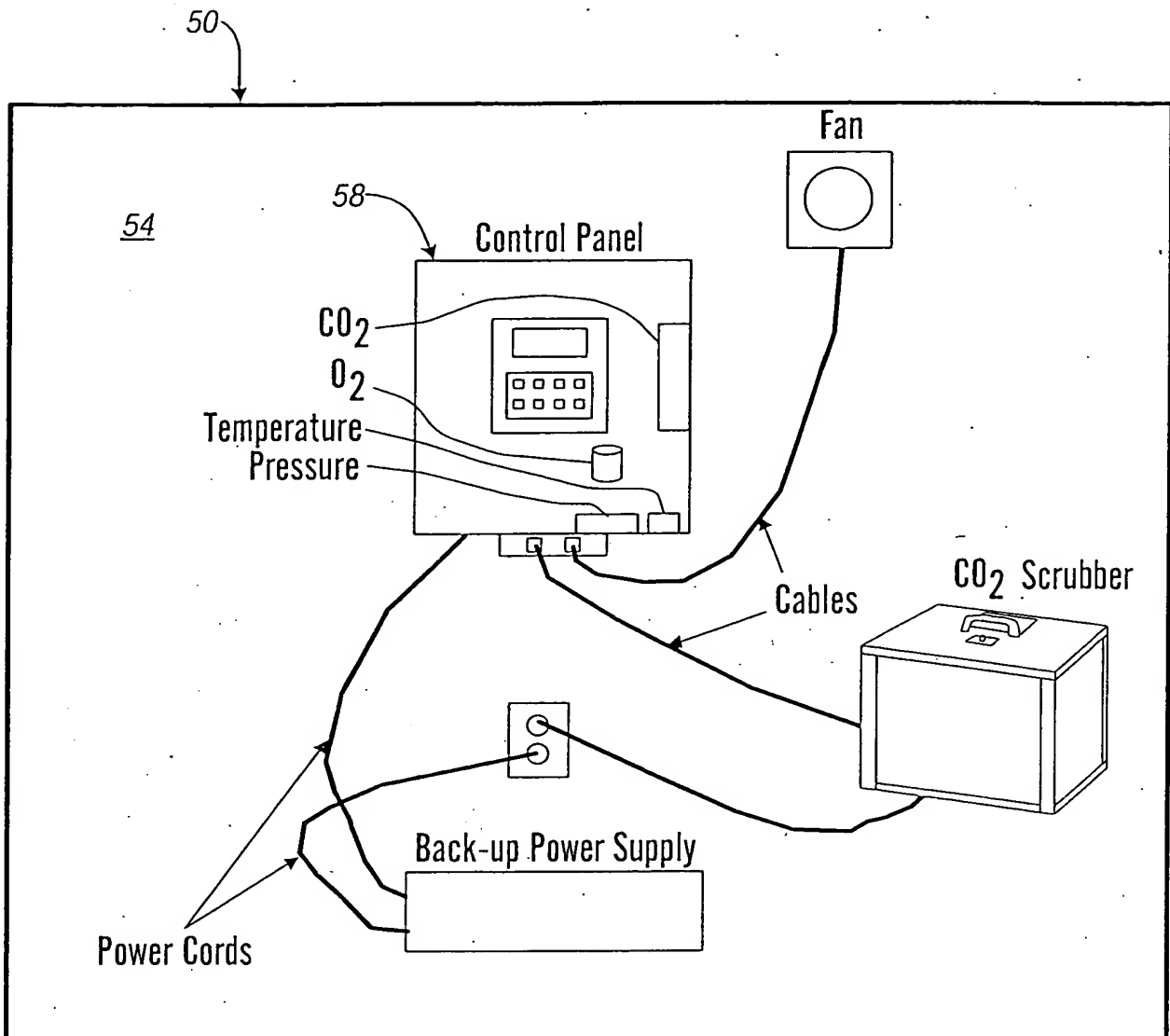
The Colorado Mountain Room as configured
for use in a person's bedroom.

FIG. 2



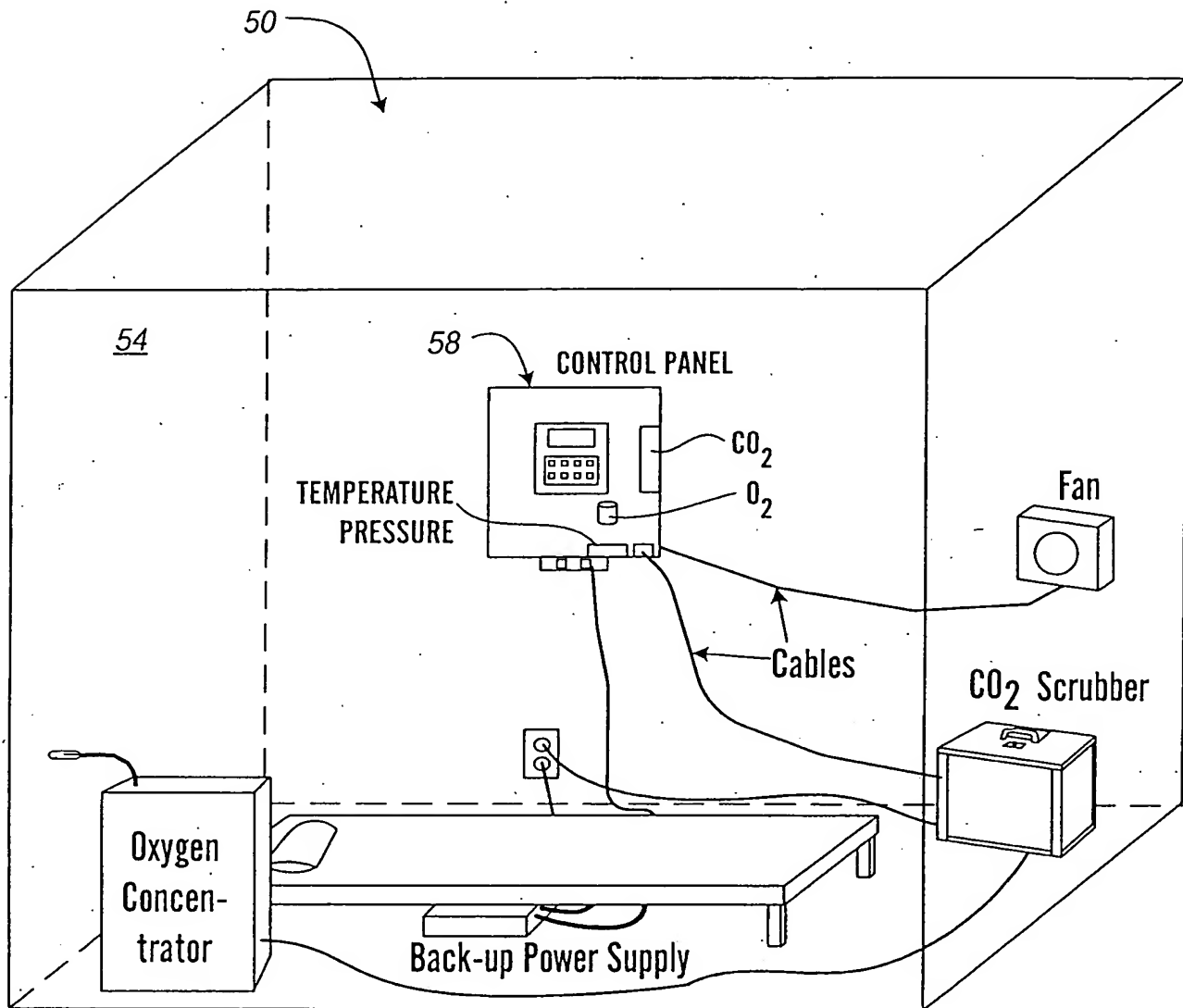
The Colorado Mountain Room, configured for use as a low altitude room.

FIG. 4



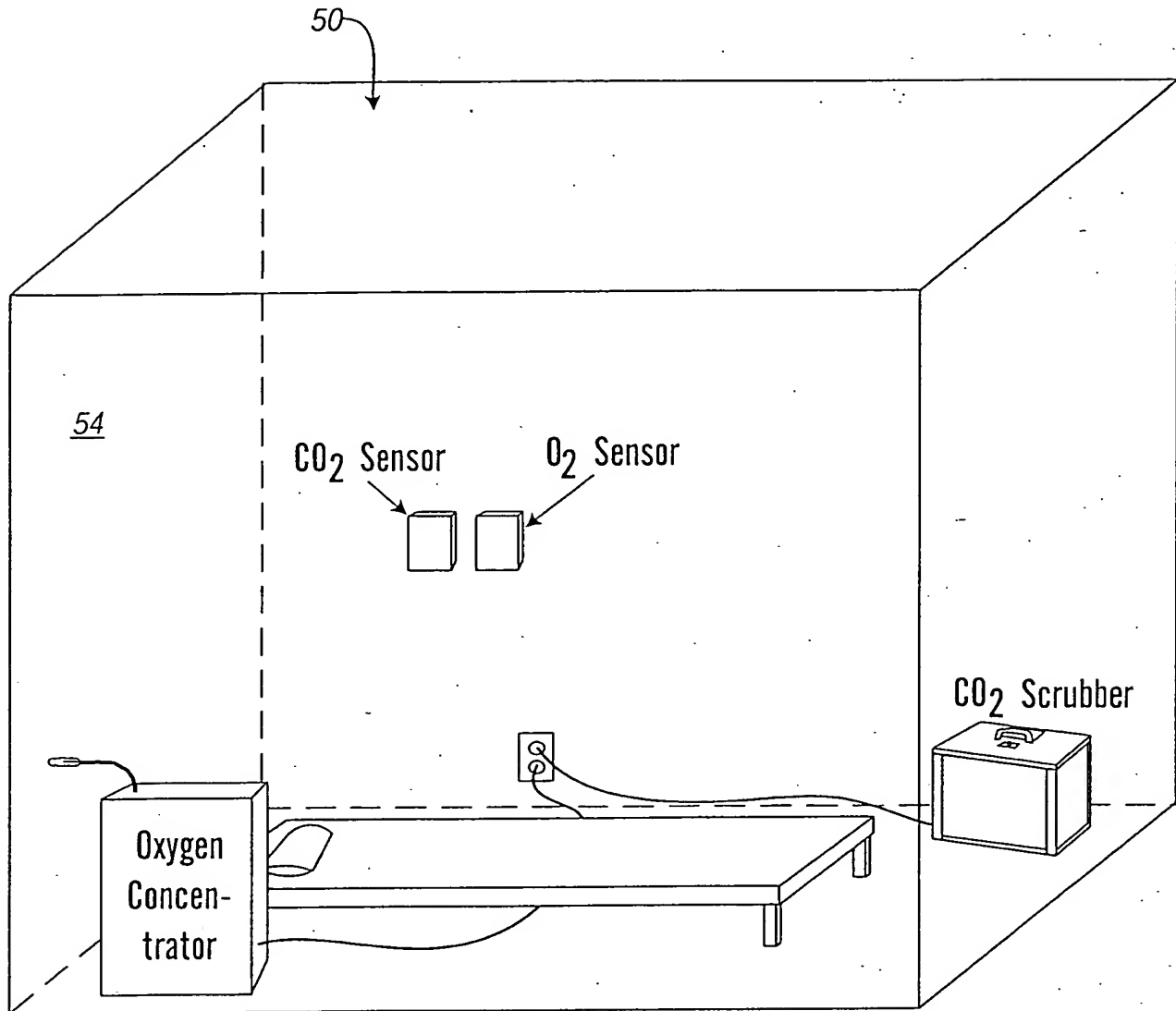
The Colorado Mountain Room,
configured for use as a high CO₂ room.

FIG. 5



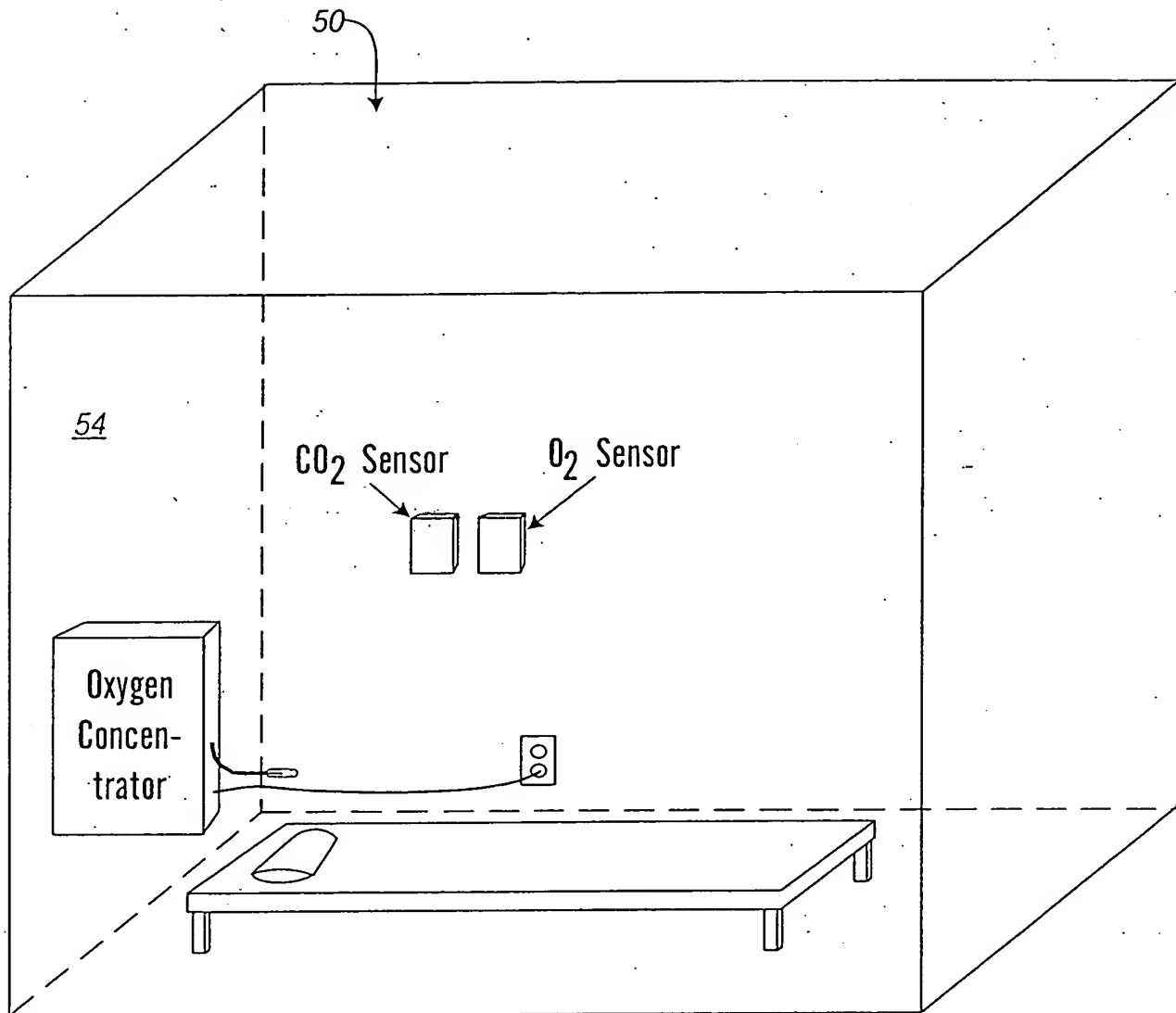
Portable CMR, configured for use as a
high altitude room.

FIG. 6



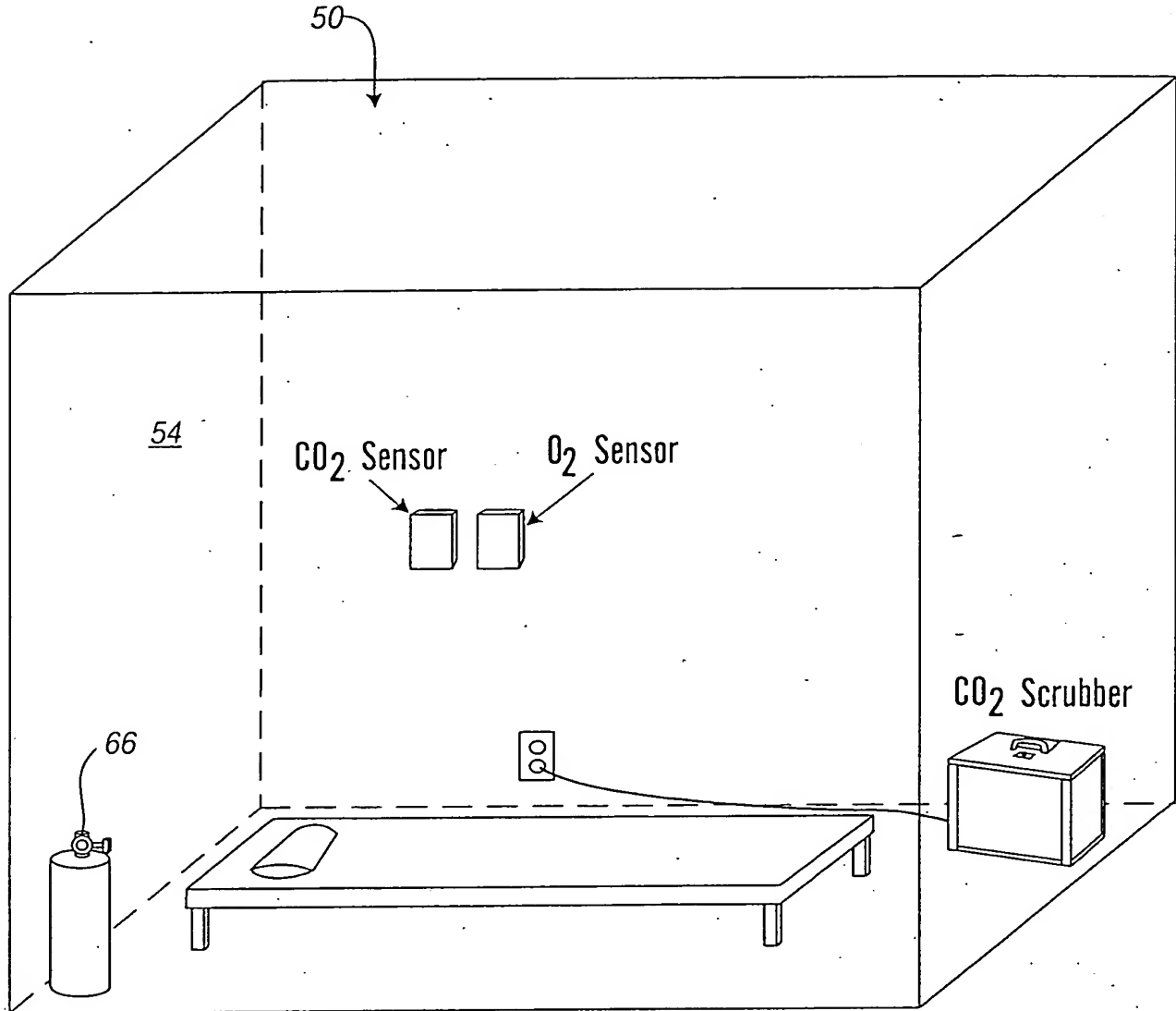
Portable CMR, configured for use as a high altitude room.

FIG. 7



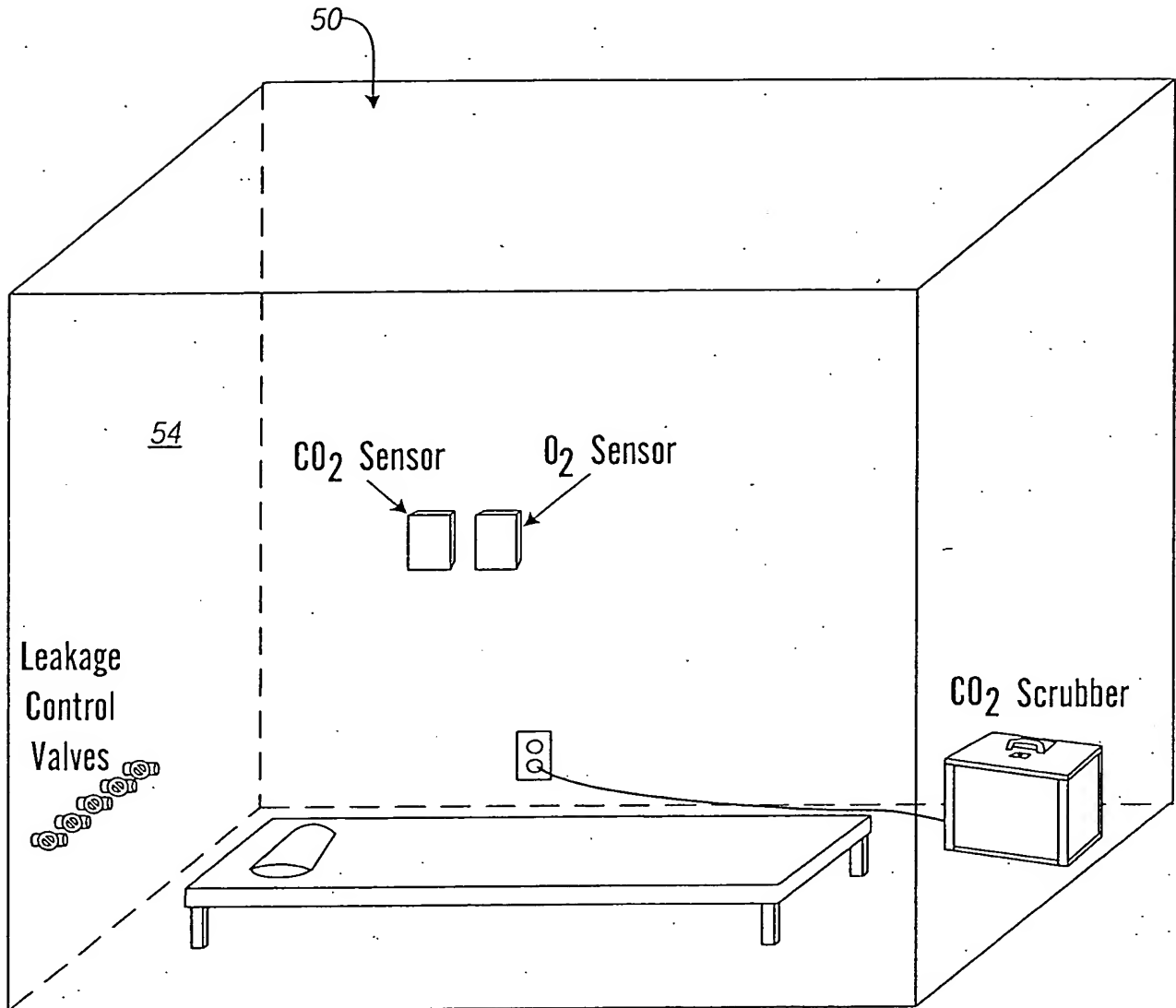
Portable CMR, configured for use as a
high altitude room.

FIG. 8



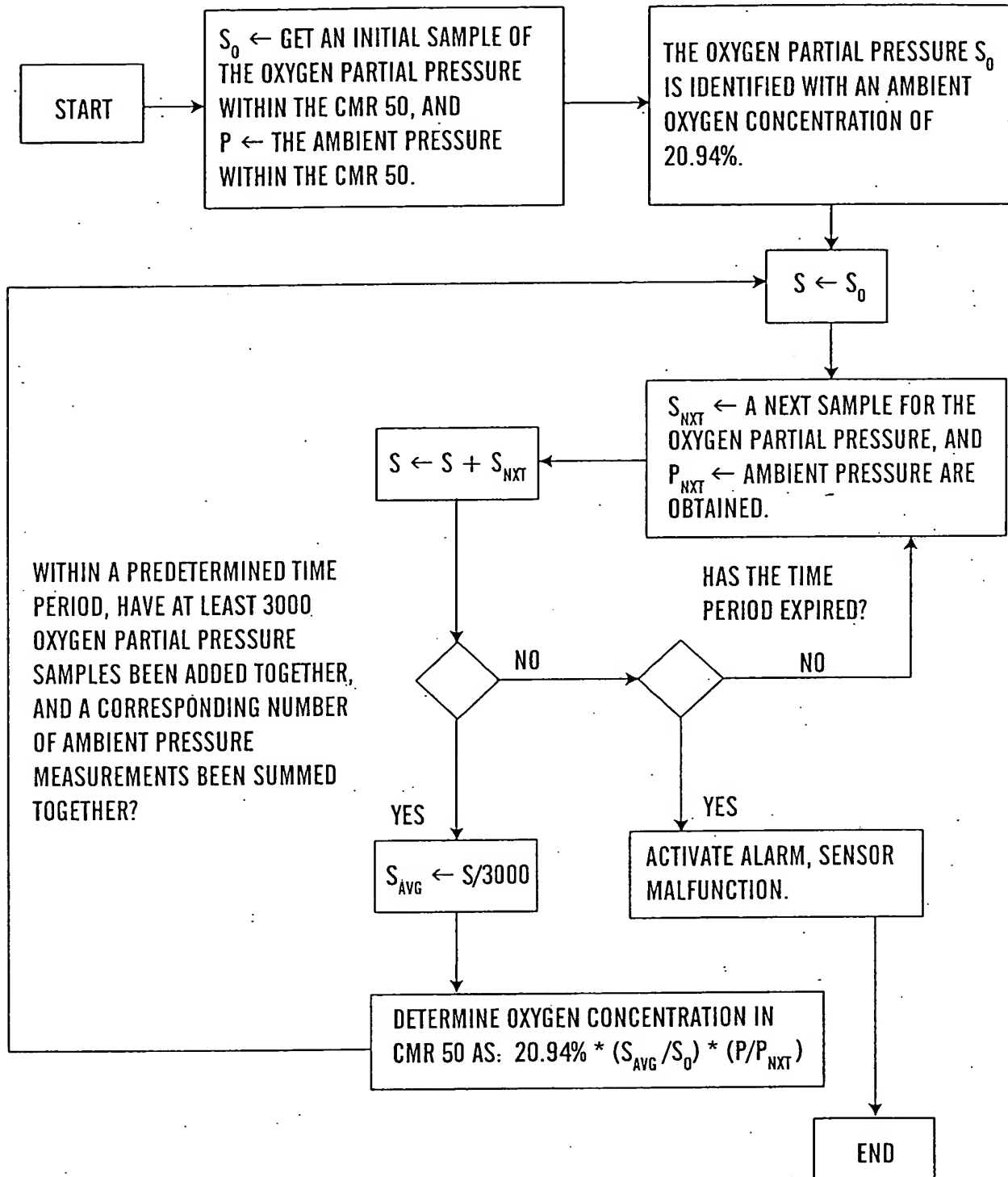
Portable CMR, configured for use as a high altitude room.

FIG. 9



Portable CMR, configured for use as a
high altitude room

FIG. 10



A flowchart for the calibration, averaging, and pressure compensation of the oxygen sensor.

FIG. 11

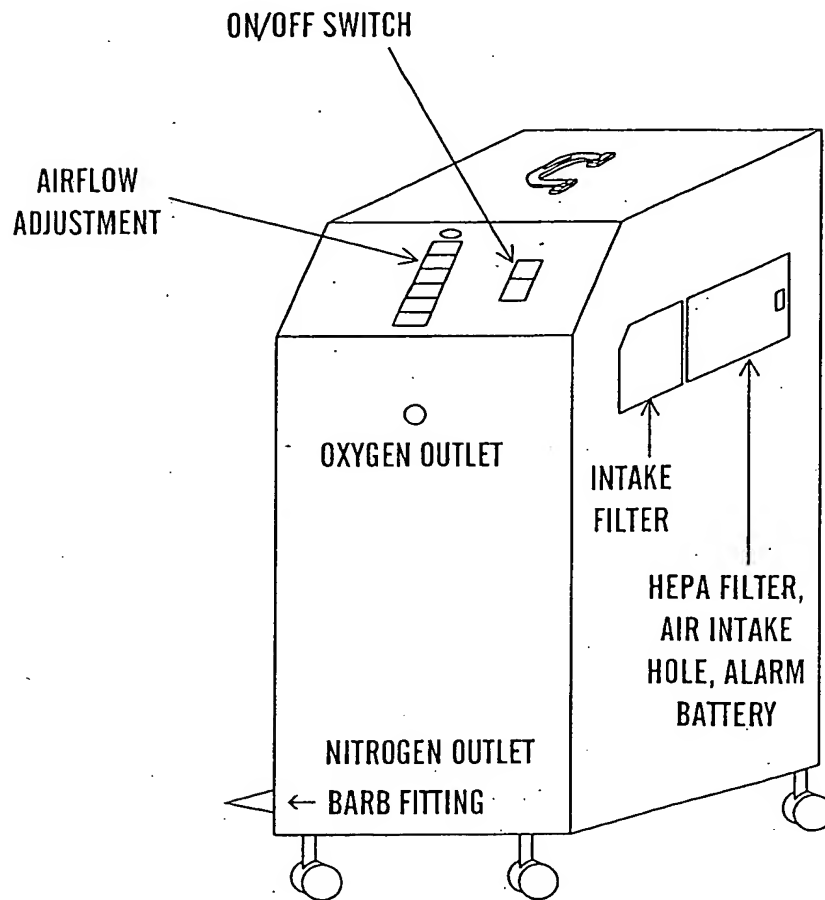


FIG. 12

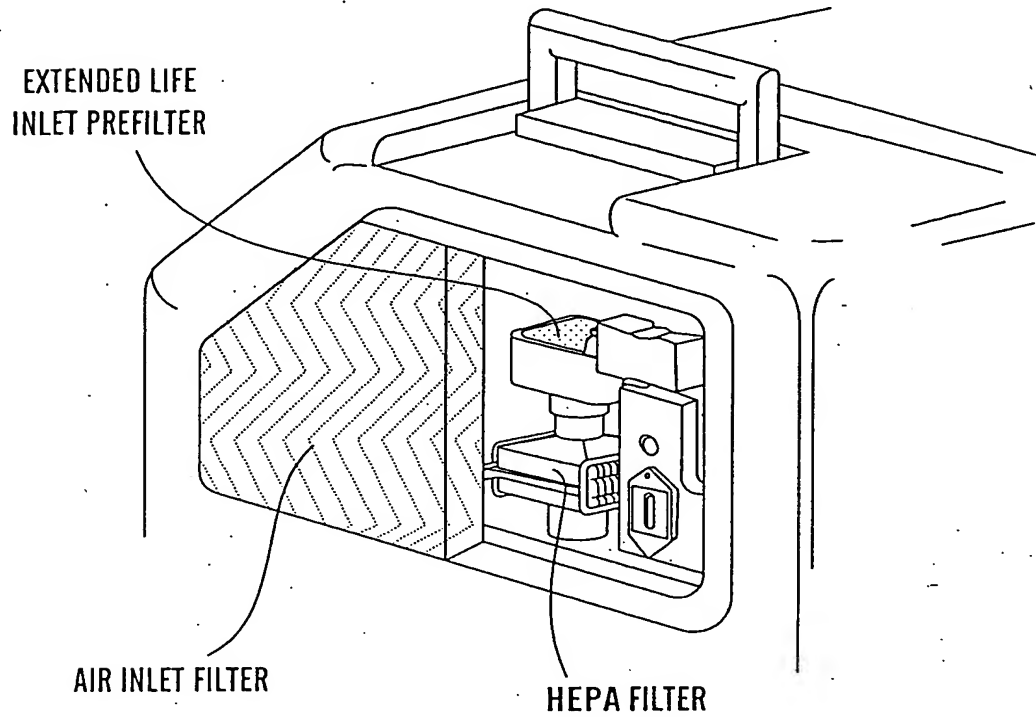


FIG. 13

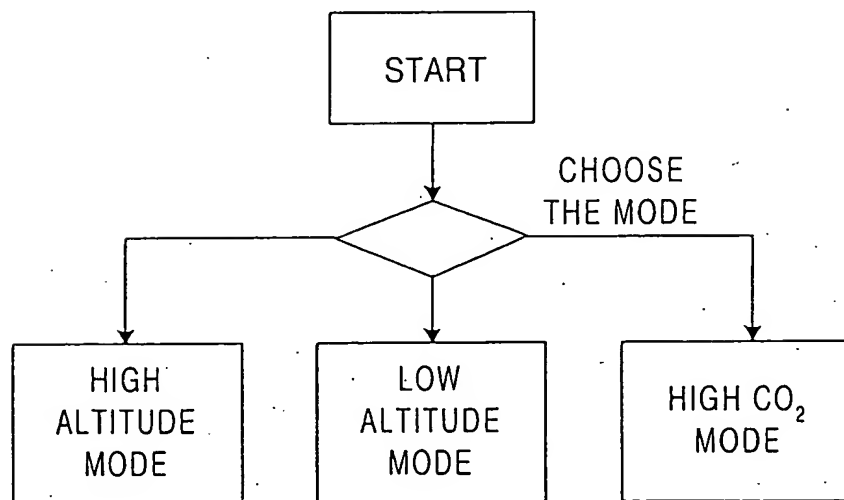


FIG. 14

FIG. 15

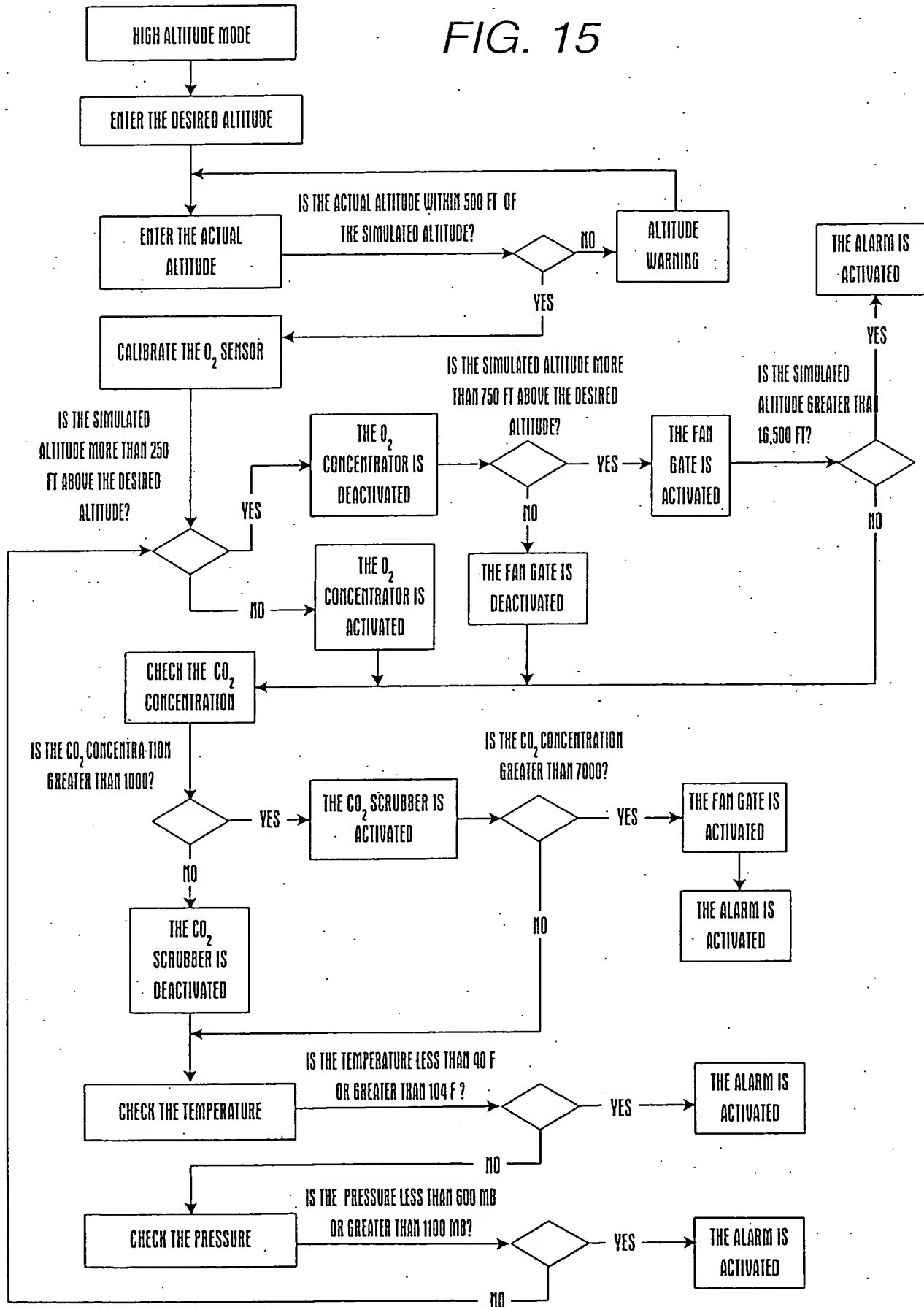


FIG. 16

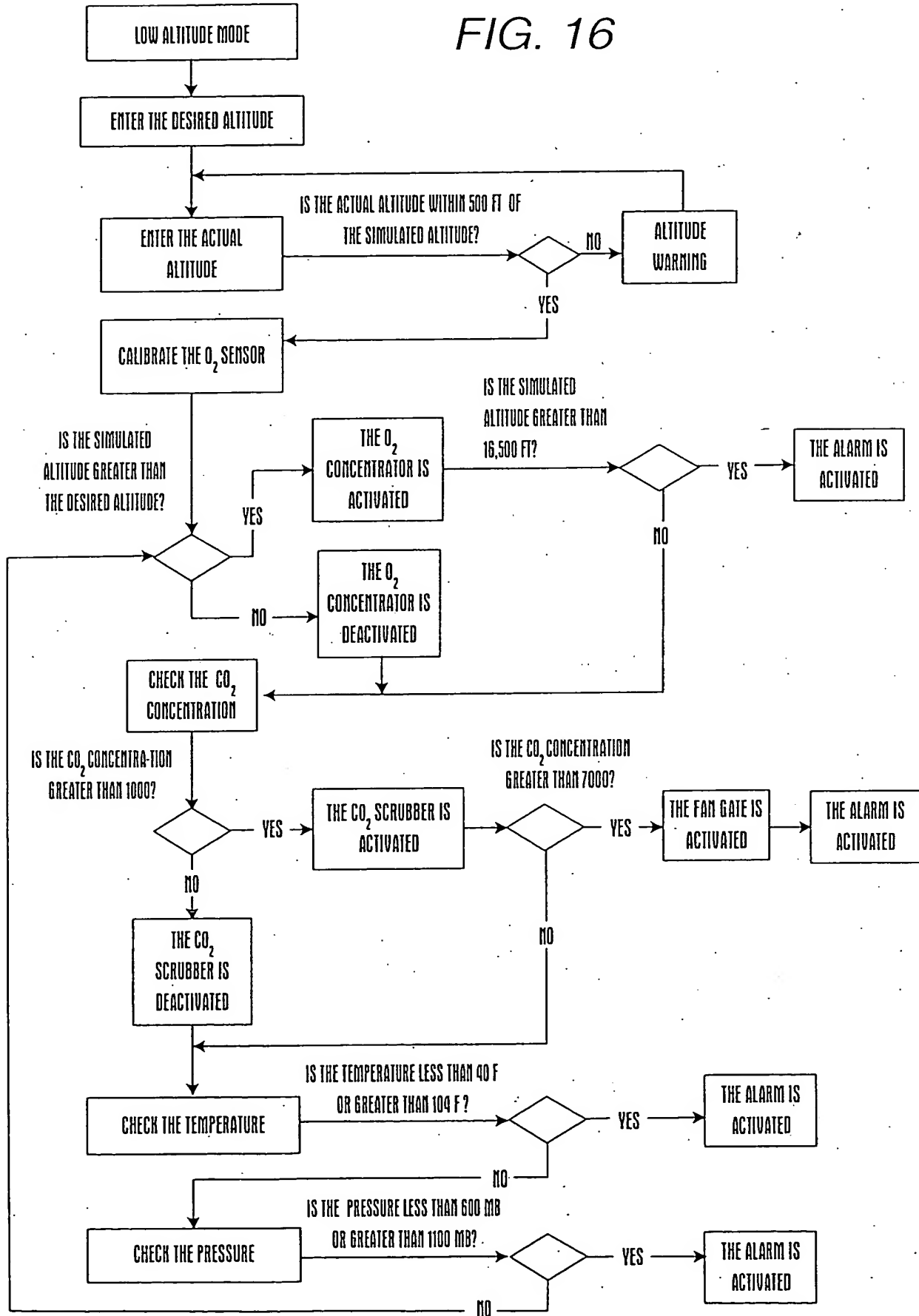


FIG. 17

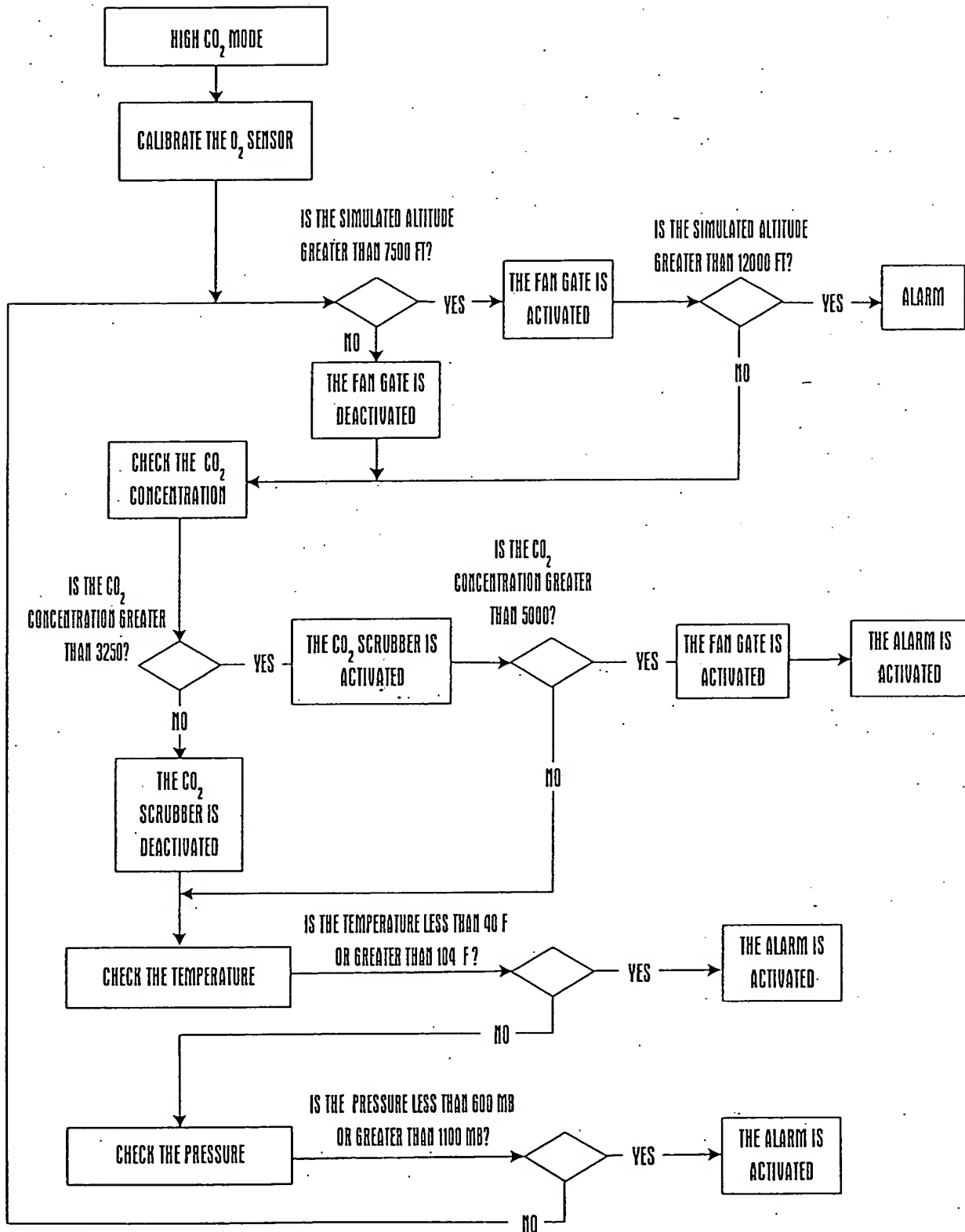
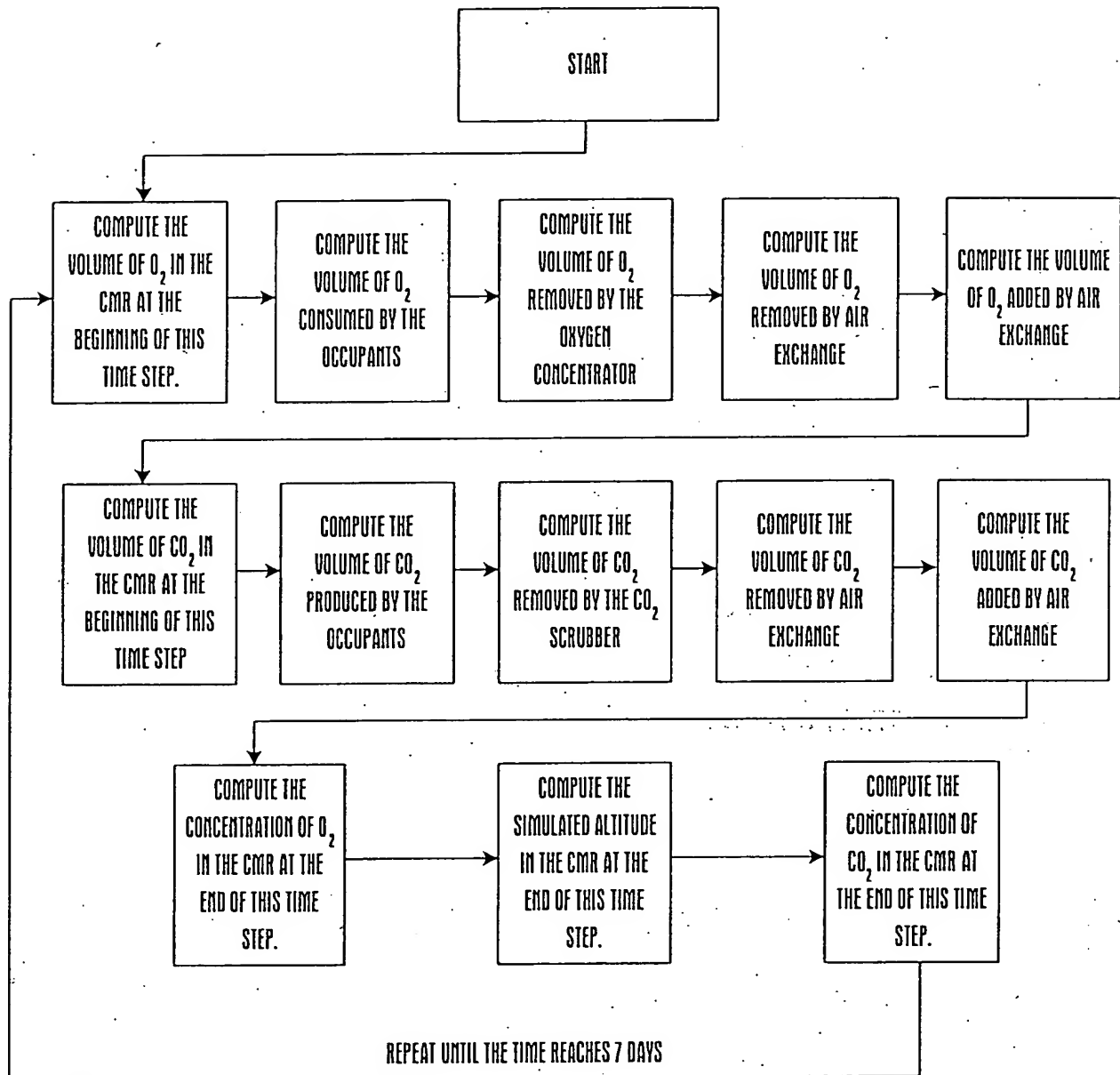


FIG. 18



Colorado Altitude Training
 Oxygen & CO₂ Variations in Rooms of Different Sizes
 Directions for using this spread sheet
 Change numbers in red only.

Room Size	
Length (ft)	10
Width (ft)	10
Height (ft)	10
Room Volume (ft ³)	1000
Room Volume (l)	28,317
Altitude of Site (ft asl)	800
Sea Level Pressure (mb)	1013.25
Station Pressure (mb)	985
Number of People in Room	0
O ₂ Removal Rate per System (slpm)	5
Number of Systems	1
Per Person Surface Area (m ²)	1.8
Per Person Heat Generation (w/m ²)	45
Resp. Coefficient (dimensionless)	0.83
Per Person O ₂ Consumption (slpm)	0.239477195
Per Person CO ₂ Production (slpm)	0.198766072
Initial O ₂ Content (%)	20.94
Initial Simulated Pressure (mb)	985
Initial Simulated Altitude (ft)	800
Outdoor CO ₂ Concentration (ppmv)	400
Initial Room CO ₂ Conc. (ppmv)	400
CO ₂ Scrubber Air Flow Rate (cfm)	10
CO ₂ Scrubber Efficiency (%)	80
Air Change Rate (ACH, hr ⁻¹)	0.043

FIG. 19

FIG. 20 Oxygen Consumption

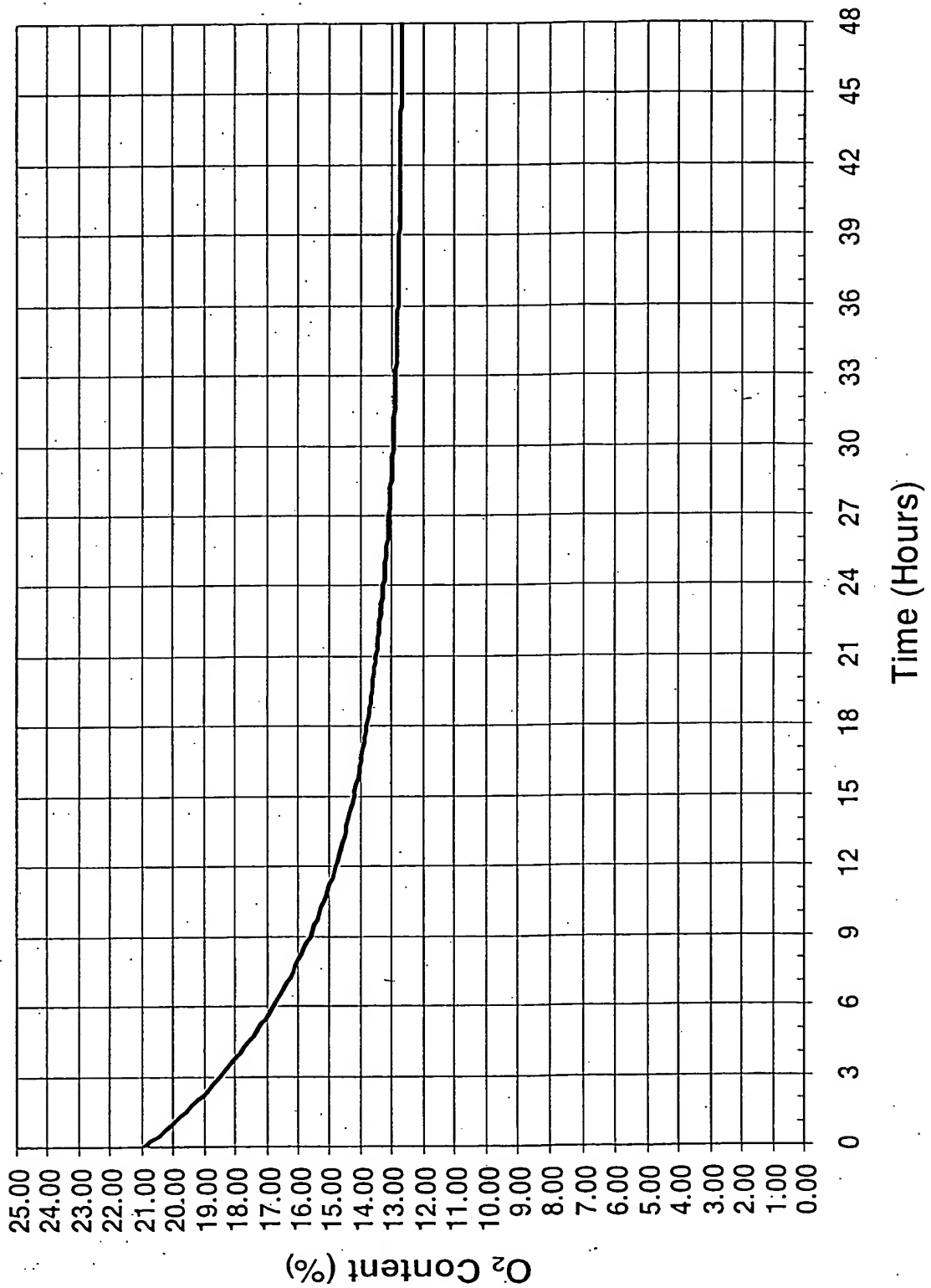


FIG. 21

CO₂ Production

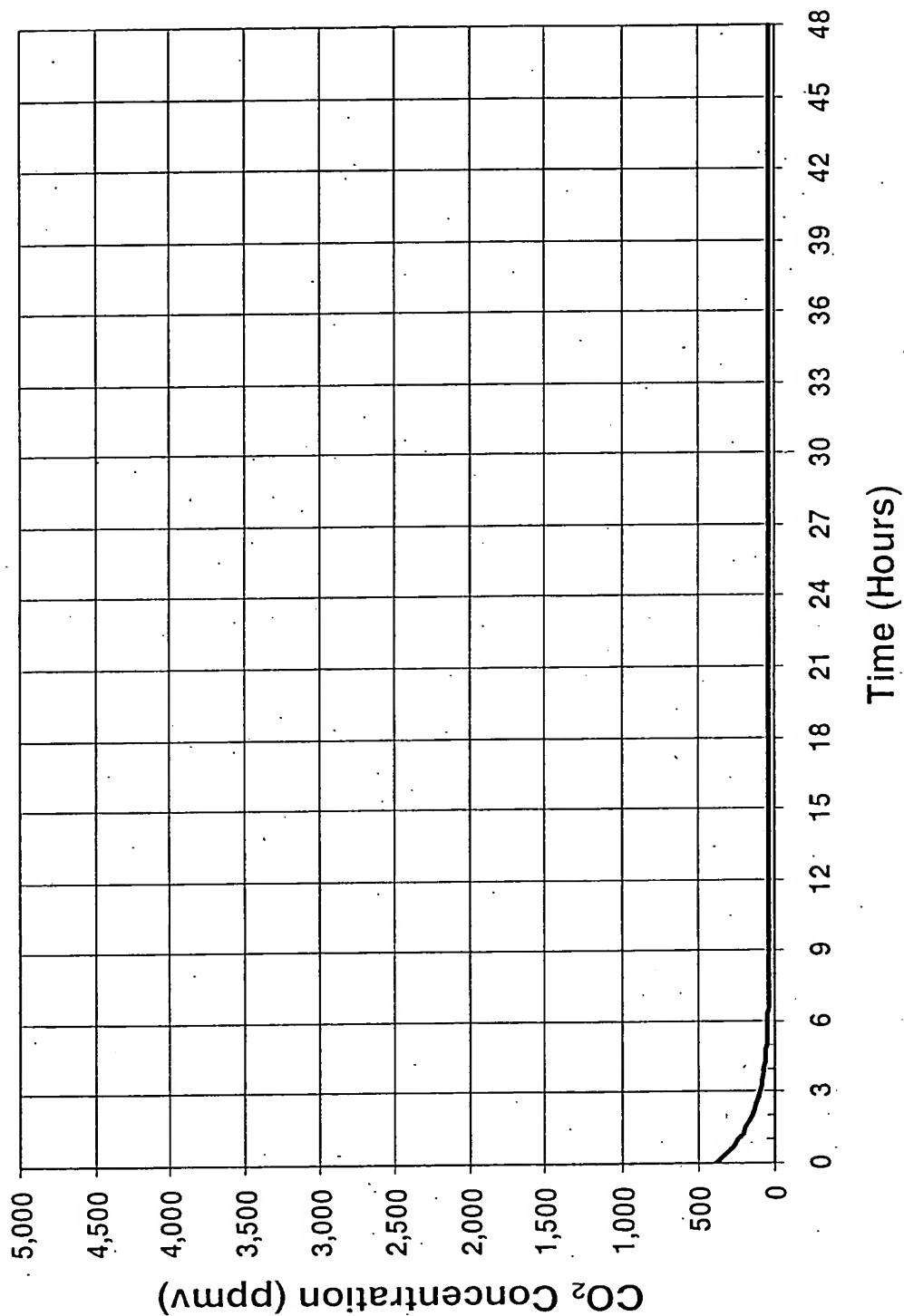
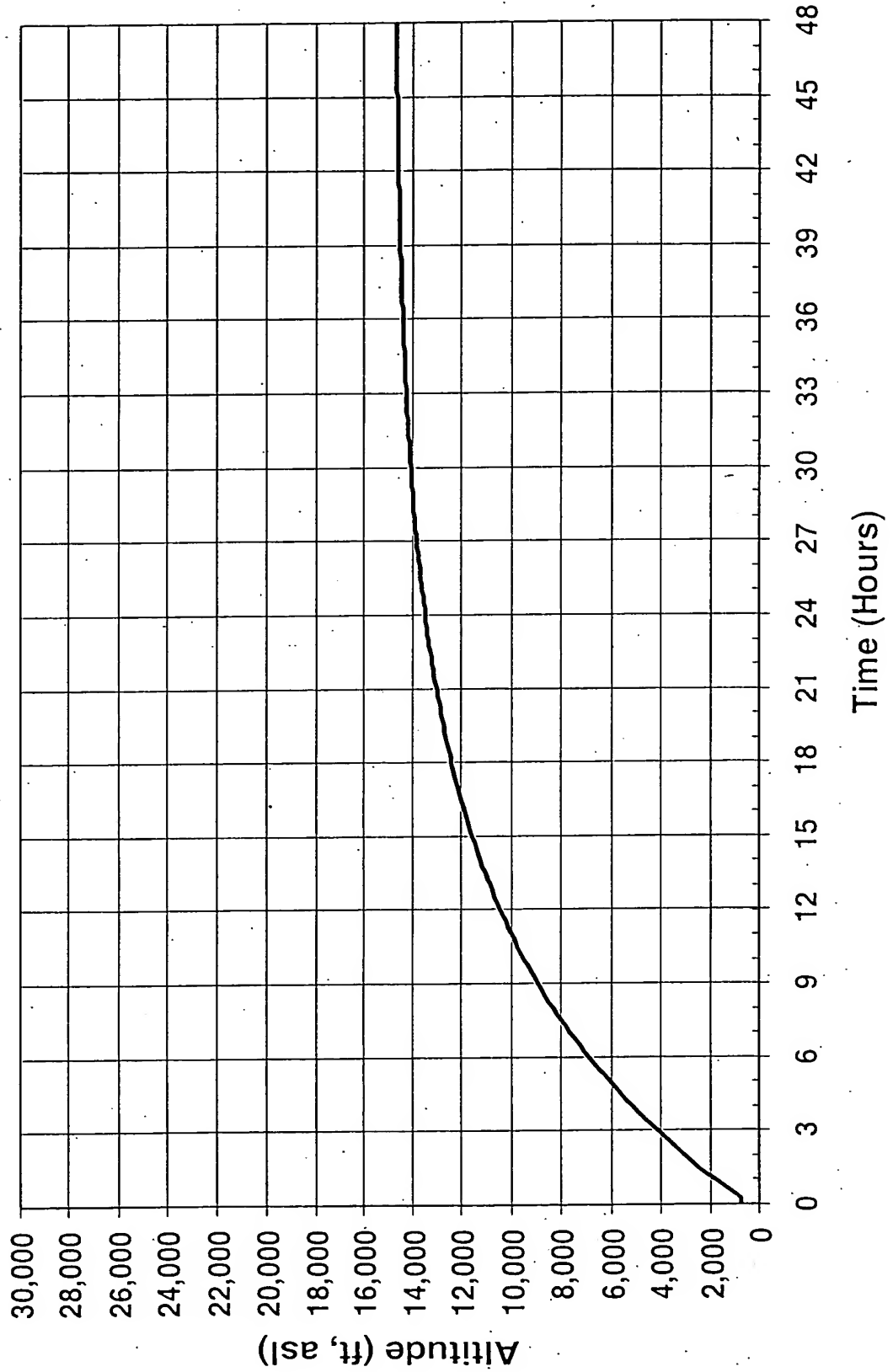


FIG. 22

Equivalent Altitude



Oxygen Consumption

FIG. 23

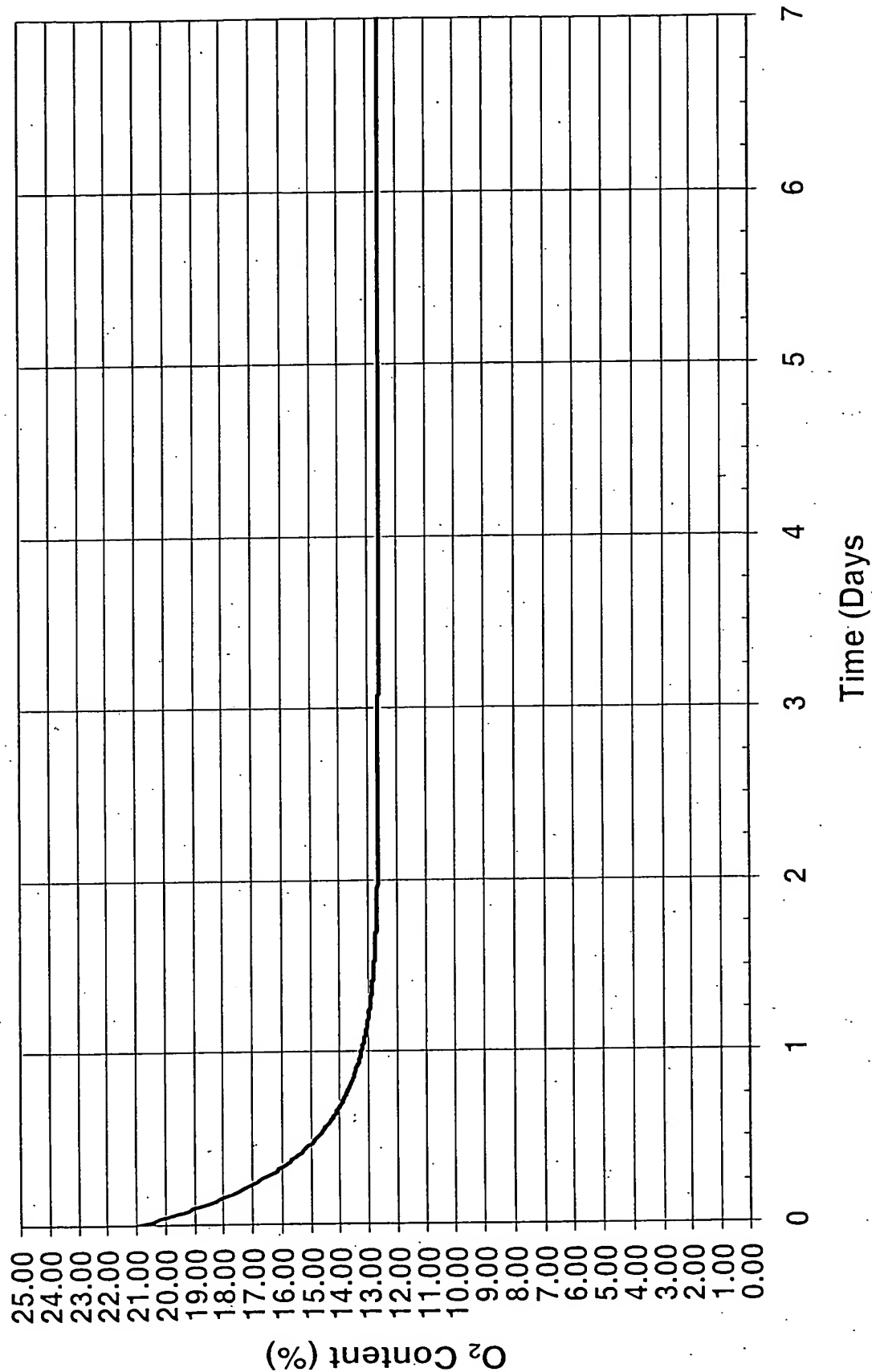


FIG. 24 CO₂ Production

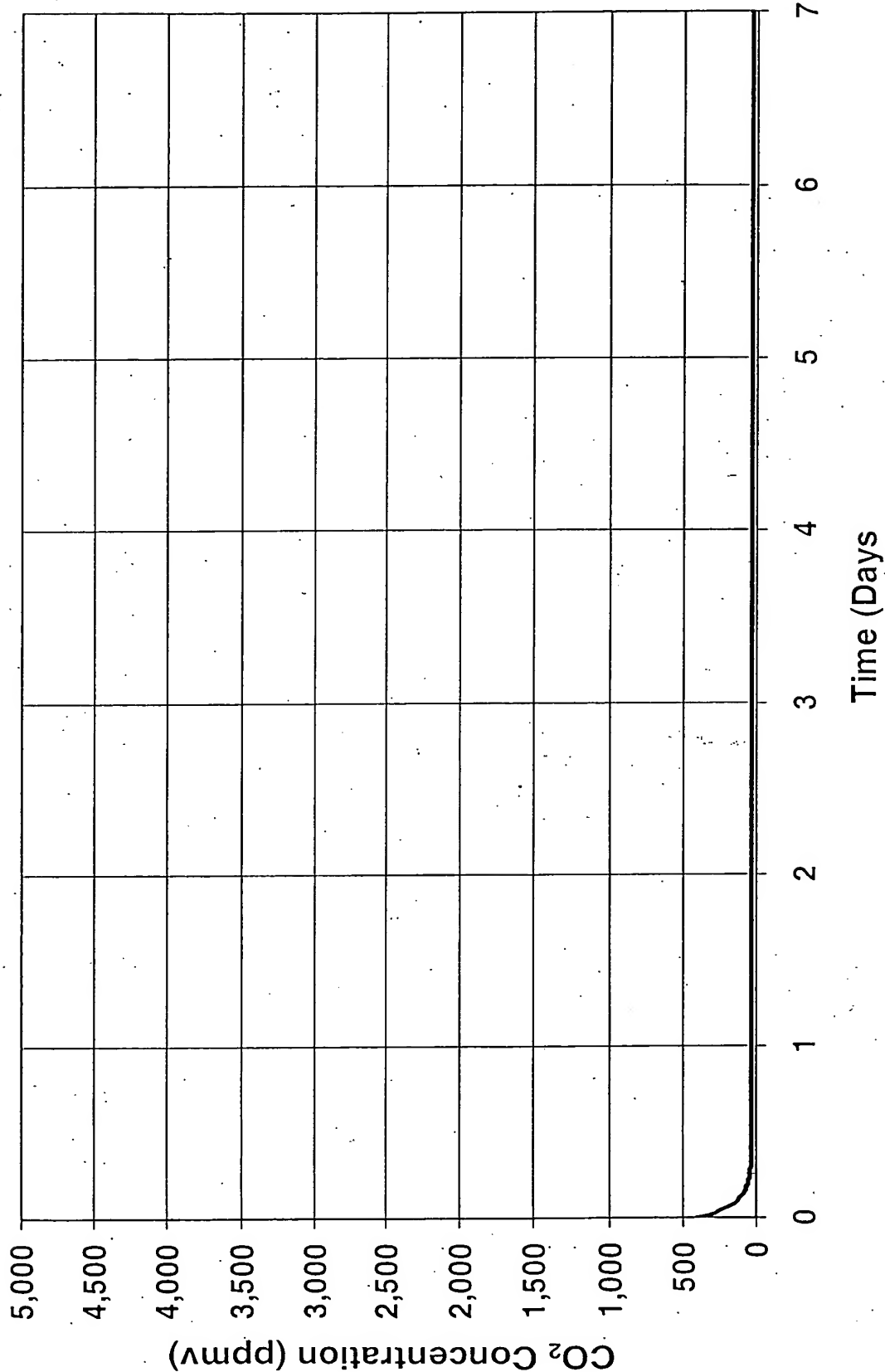


FIG. 25

Equivalent Altitude

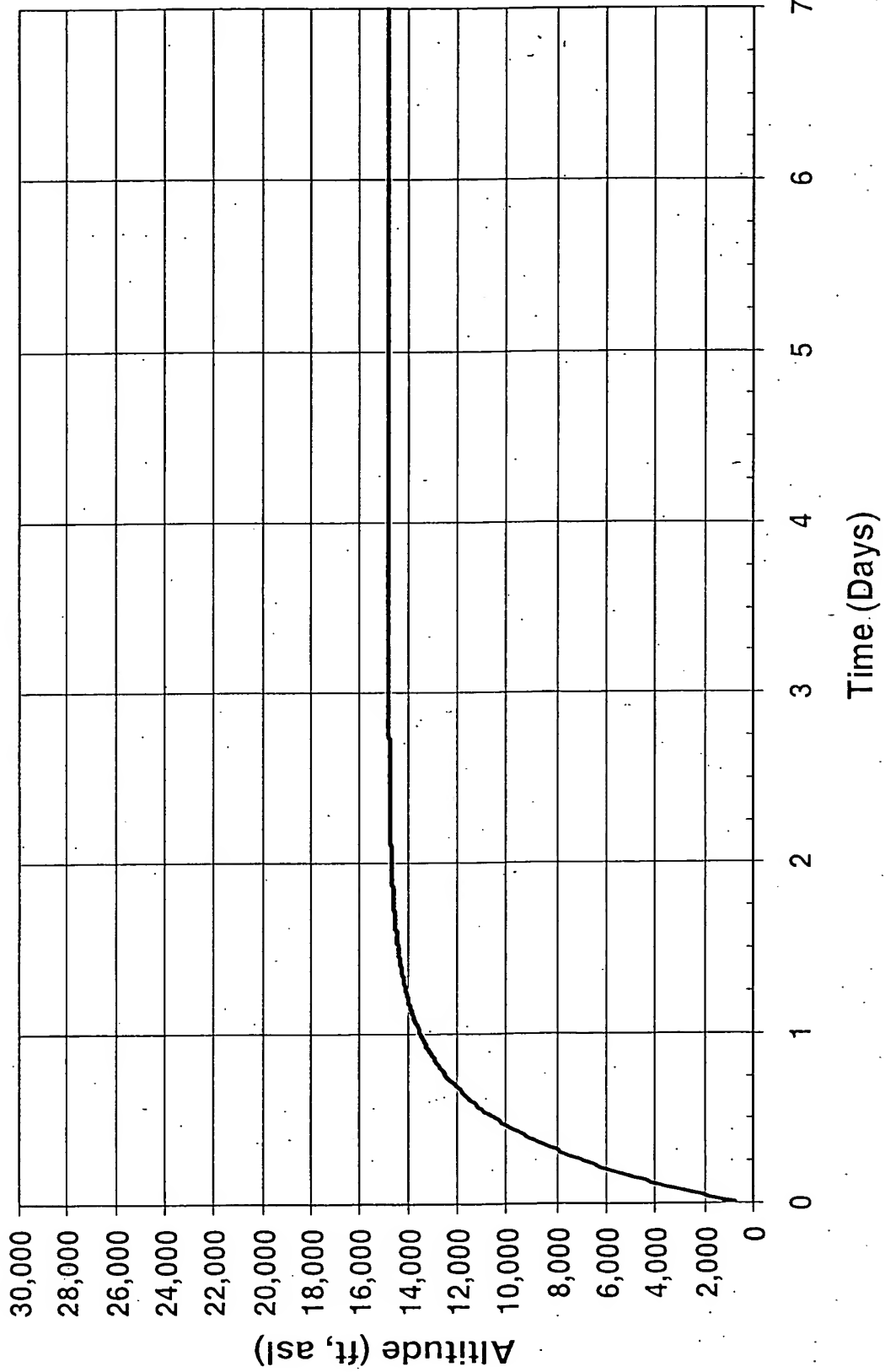


FIG. 26
Oxygen Consumption

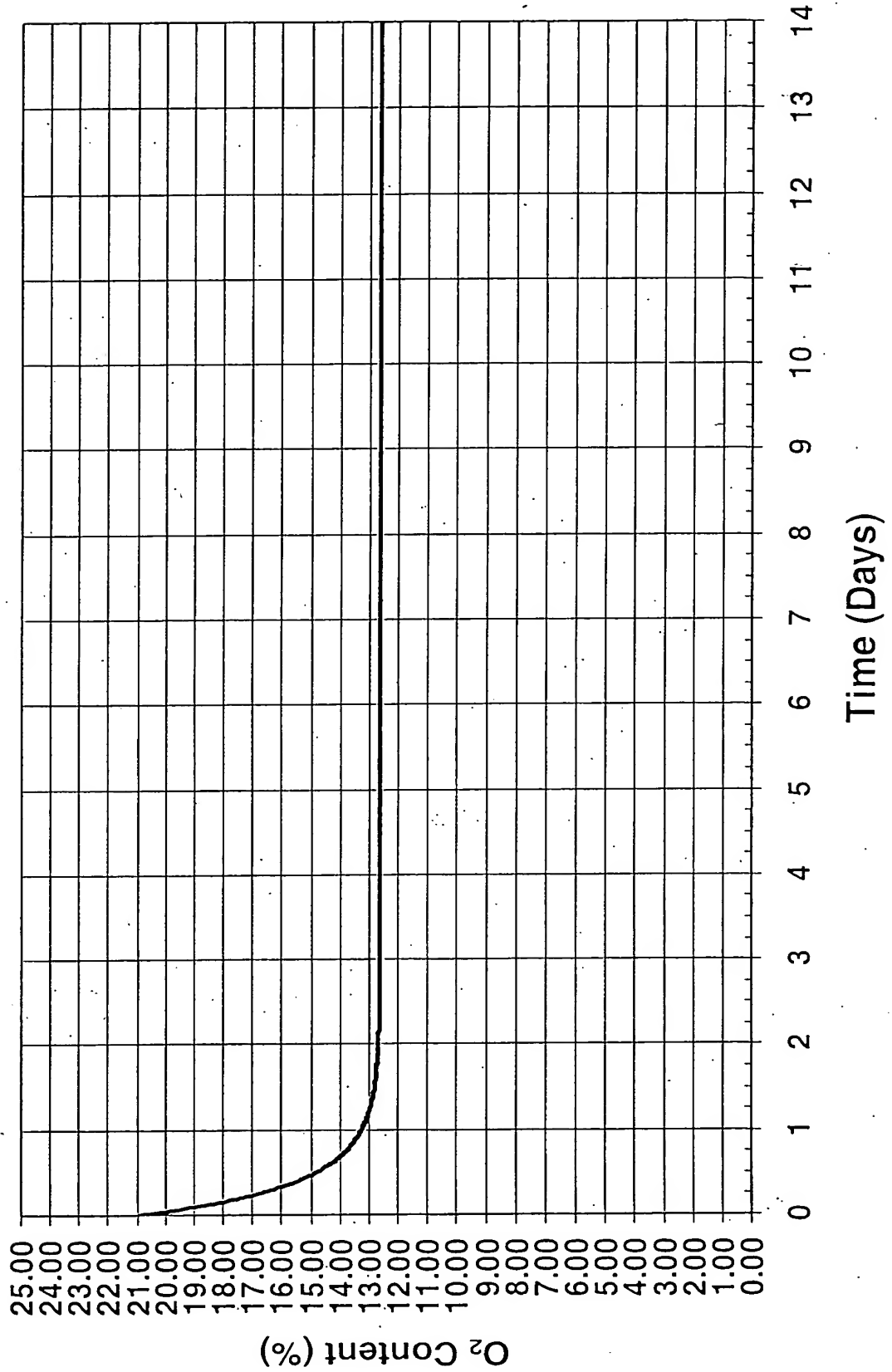


FIG. 27

CO₂ Production

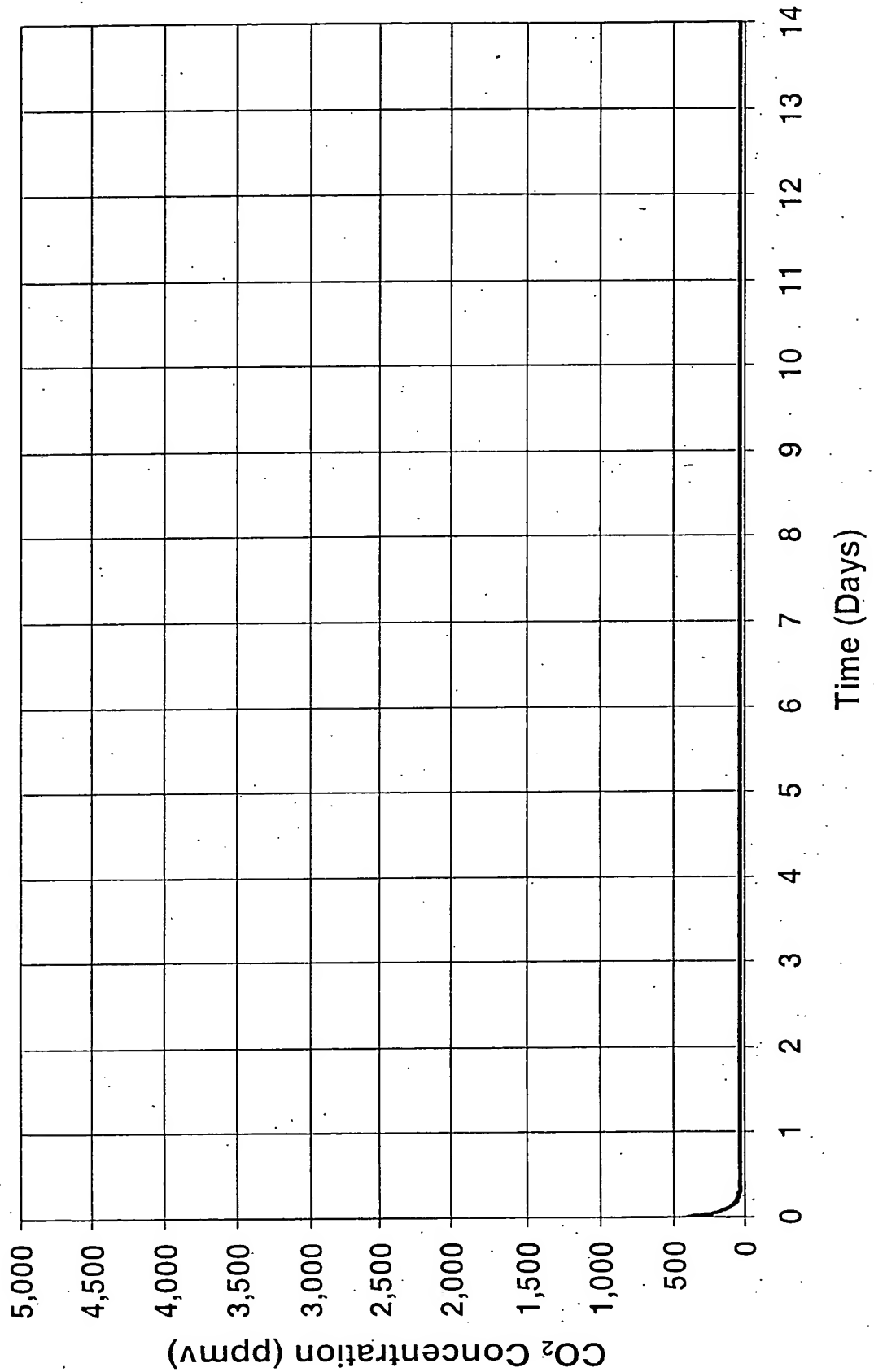


FIG. 28

Equivalent Altitude

